



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

TRANSACTIONS
OF THE
AMERICAN PHILOSOPHICAL SOCIETY,
HELD AT PHILADELPHIA,
FOR PROMOTING USEFUL KNOWLEDGE.

VOL. XII.—NEW SERIES.

PART III.

ARTICLE IV.—*Intellectual Symbolism: A Basis for Science.* By *Pliny Earle Chase, M.A.*

Philadelphia:
PUBLISHED BY THE SOCIETY,
AND FOR SALE BY
BLANCHARD & LEA, PHILADELPHIA;
N. TRUBNER & CO., 60 PATERNOSTER ROW, LONDON.

PRINTED BY C. SHERMAN, SON & CO.

1863.

OFFICERS

OF THE

AMERICAN PHILOSOPHICAL SOCIETY,

FOR THE YEAR 1863.

PATRON,	His Excellency, the Governor of Pennsylvania.
PRESIDENT,	George B. Wood.
VICE-PRESIDENTS,	{ John C. Cresson, Isaac Lea, George Sharswood.
SECRETARIES,	{ Charles B. Trego, E. Otis Kendall, John L. Le Conte, J. Peter Lesley.
CURATORS,	{ Franklin Peale, Elias Durand, Joseph Carson.
TREASURER,	Charles B. Trego.
COUNSELLORS, elected for three years. In 1861, . . .	{ Alfred L. Elwyn, John Bell, Henry Coppée, Edward King.
In 1862, . . .	{ Isaac Hays, Robert E. Rogers, Henry C. Carey, Robert Bridges.
In 1863, . . .	{ Frederick Fraley, Robert Patterson, Daniel R. Goodwin, W. Parker Foulke.
LIBRARIAN,	J. Peter Lesley.

LIST OF MEMBERS

OF THE

AMERICAN PHILOSOPHICAL SOCIETY

ELECTED SINCE THE PUBLICATION OF THE ELEVENTH VOLUME.

- | | |
|---|--|
| Francis V. Hayden, M.D., of West Philadelphia. | Mirza Alexander Kasem Beg, of St. Petersburg. |
| Sidney George Fisher, of Philadelphia. | Dr. Otto Böhtlingk, of St. Petersburg. |
| Sir Roderick Impey Murchison, F.R.S., of London. | Dr. G. Forchhammer, of Copenhagen. |
| Rev. Adam Sedgewick, F.R.S., of Cambridge, England. | Dr. J. S. Steenstrup, of Copenhagen. |
| Léonce Elie de Beaumont, of Paris. | Dr. C. J. Thomsen, of Copenhagen. |
| Henry Milne Edwards, of Paris. | Andrew Crombie Ramsay, F.R.S., of London. |
| Dr. H. D. Bronn, of Heidelberg. | Professor Edouard Desor, of Neuchâtel. |
| Dr. T. L. W. Bischoff, of Munich. | Dr. L. G. De Koninck, of Liège. |
| Dr. Hermann Von Meyer, of Frankfort on Maine. | Dr. Joachim Barrande, of Prag. |
| Dr. Andreas Wagner, of Munich. | Dr. Robert W. Bunsen, of Heidelberg. |
| Dr. Joseph Hyrtl, of Vienna. | Dr. William Hofmann, F.R.S., of London. |
| Sir William E. Logan, F.R.S., of Montreal. | Dr. H. R. Göppert, of Breslau. |
| Dr. Heinrich Rose, of Berlin. | Dr. Alexander Braun, of Leipsig. |
| Dr. George Jäger, of Stuttgart. | William John Hamilton, F.R.S., of London. |
| Dr. St. Claire Deville, of Paris. | Sir William Jackson Hooker, F.R.S., of London. |
| William Henry Harvey, M.D., F.R.S., of Dublin. | Dr. J. J. Kaup, of Darmstadt. |
| Dr. Jean Baptiste Dumas, of Paris. | Dr. J. Anthony Froude, of Oxford. |
| Professor Edouard Verneuil, of Paris. | Hermann Lebert, M.D., of Breslau. |
| Dr. Claude Bernard, of Paris. | S. Weir Mitchell, M.D., of Philadelphia. |
| Daniel R. Goodwin, D.D., of Philadelphia. | Dr. F. L. Otto Roehrig, of Philadelphia. |
| Leo Lesquereux, of Columbus, Ohio. | Lieut. Henry L. Abbot, Corps of Top. Eng. U. S. A. |
| John Lothrop Motley, LL.D., of Vienna. | Dr. Oswald Heer, of Zurich, Switzerland. |
| Don Pascual de Gayangos, of Madrid. | Dr. John Lindley, F.R.S., of London. |
| John Curwen, M.D., of Harrisburg. | Dr. John Von Liebig, of Munich. |
| Dr. Charles Des Moulins, of Bordeaux. | Dr. Frederick Wöhler, of Göttingen. |
| Thomas Sterry Hunt, F.R.S., of Montreal, Canada. | Professor J. D. Dawson, of Montreal, Canada. |
| Professor Paolo Volpicelli, of Rome. | Admiral Samuel F. Dupont, U. S. N. |

Dr. George Engelmann, of St. Louis, Mo.
William S. Sullivant, Esq., of Columbus, Ohio.
Dr. Evan Pugh, Principal of Farmers' H. S. Pa.
Dr. Andrew A. Henderson, U. S. N.
Robert Cornelius, of Philadelphia.
Dr. Rudolph Virchow, of Berlin.
Dr. Frederic Theodore Frerichs, of Berlin.
Thomas Jefferson Lea, of Maryland.
Dr. Louis Stromeier, of Hanover.
Dr. Karl Rokitansky, of Vienna.
Henry Winsor, Esq., of Philadelphia.
Dr. James Y. Simpson, of Edinburgh.
Dr. Théodore Schwann, of Liège.
Dr. Jacques L. Grimm, of Berlin.

Dr. Franz Bopp, of Berlin.
Dr. Ernest Renan, of Paris.
Dr. Max Müller, of Cambridge, England.
Joseph D. Whitney, S. G. California, San Francisco.
A. H. Worthen, State Geol. Illinois, Springfield.
Dr. Daniel Wilson, of Toronto, C. W.
Dr. Frederic Troyon, of Lausanne.
M. Boucher de Perthes, of Abbeville, France.
Prof. Pliny E. Chase, of Philadelphia.
Dr. I. I. Hayes, of West Philadelphia.
Dr. George Smith, of Delaware Co., Penna.
Hon. John M. Read, of Philadelphia.
Dr. Edward Jarvis, of Dorchester, Mass.

LIST OF MEMBERS

REPORTED DECEASED

SINCE THE PUBLICATION OF THE LAST VOLUME.

Hon. James K. Paulding.
Judge Thomas Sergeant, of Philadelphia.
Samuel D. Ingham, Esq.
Henry S. Tanner, Esq., of New York.
André-Marie-Constant Dumeril, of Paris.
Hon. Henry D. Gilpin, of Philadelphia.
Sig. Andrea Mustodixi, of Corfu.
Hartman Kuhn, Esq., of Philadelphia.
Major John Le Conte, U. S. A., of Philadelphia.
Steen Anderson De Billé, of Brussels.
Judge William Kent, of New York.
Dr. Samuel Moore, of Philadelphia.
Dr. William Harris, of Philadelphia.
Dr. Thomas Harris, of Philadelphia.
Dr. John W. Francis, of New York.
Don Pedro Cevallos, of Spain.
Prof. George Tucker, of Albemarle Co., Va.
Don Angel Calderon de la Barca, of Spain.
Joseph N. B. Von Abrahamson, of Copenhagen.
Sir John Forbes, F.R.S., of London.

F. Martinez de la Rosa, of Spain.
George M. Justice, of Philadelphia.
Sig. Hyacinth Carena, of Turin.
Charles J. Ingersoll, of Philadelphia.
George W. Bethune, D.D., of New York.
Dr. Karl C. Von Leonhard, of Heidelberg.
Dr. Edward Stanley, of London.
Duke Bernard Von Saxe-Weimar.
Dr. H. G. Bronn, of Heidelberg.
Hon. Samuel Breck, of Philadelphia.
Carl Adolf Agardh, of Lund, Sweden.
General O. M. Mitchell, U. S. A.
Edmé-François Jomard, of Paris.
Ellwood Morris, C. E., of North Carolina.
Col. Charles Ellet, U. S. V.
Capt. William R. Palmer, U. S. T. E.
Prof. James Renwick, of New York.
Col. J. J. Abert, U. S. Top. Engineers.
Dr. Carl Ludwig Rümker, of Hamburg.

E X T R A C T

FROM THE LAWS OF THE SOCIETY RELATING TO THE TRANSACTIONS.

1. Every communication to the Society which may be considered as intended for a place in the Transactions, shall immediately be referred to a committee to consider and report thereon.

2. If the committee shall report in favor of publishing the communication, they shall make such corrections therein as they may judge necessary to fit it for the press; or, if they shall judge the publication of an abstract or extracts from the paper to be more eligible, they shall accompany their report with such abstract or extracts. But if the author do not approve of the corrections, abstract, or extracts reported by the committee, he shall be at liberty to withdraw his paper.

3. Communications not intended by their authors for publication in the Transactions, will be received by the Society, and the title or subject of them recorded; and, if they be in writing, they shall be filed by the secretaries.

4. The Transactions shall be published in numbers, at as short intervals as practicable, under the direction of the Committee of Publication, and in such a form as the Society shall from time to time direct; and every communication ordered to be published in the Transactions shall be immediately sent to the printer, and fifty copies thereof be given to the author as soon as printed.

5. The order in which papers are read shall determine their places in the Transactions, unless otherwise ordered by the Society; priority of date giving priority of location.

6. The expenses of publishing the Transactions shall be defrayed by subscriptions and sales, aided by such funds as the Society shall from time to time appropriate for that purpose.

COMMITTEE OF PUBLICATION.

ROBERT BRIDGES,
THOMAS P. JAMES,
EDWARD HARTSHORNE,
HENRY COPPEE,
CASPAR WISTAR.